

CHIEF ENGINEER'S ANNUAL REPORT

For the year 1925.

Tacoma, Washington
January 7, 1926

TO THE JOINT COMMISSION
INTER-COUNTY RIVER IMPROVEMENT

GENTLEMEN:

I have the honor to submit herewith my annual report for the year 1925, the expenditures for work performed being shown on the attached itemized budget schedule.

At the Joint Board meeting on February 7, 1925, a budget for the year amounting to \$116,000.00 was adopted. Item 1 of this budget provided \$5,000.00 for work in the Muckleshoot Section, but owing to the excellent condition of the river in this Section the amount was transferred by the Board on April 10, to Item 3. Total expenditures for the year amounted to \$112,168.28.

WEATHER AND RIVER CONDITIONS.

The year 1925 sets a third consecutive low rain-fall record amounting to only 25.78 inches, the normal rain-fall three years ago being about 46 inches. This fact taken together with no extreme conditions of temperature, resulting in very gradual run-offs, have given us excellent conditions for construction work and comparative freedom from washouts and undermining of old revetment.

The maximum stage of water during the year was about 9 ft. during the month of January.

The following is a detailed analysis of work performed:

MUCKIESHOOT SECTION.

Since the construction of drift retards in 1923 and 1924 and the removal of cables between Piers 1 and 7 at the drift barrier there has been no change in this section and no work was done as explained above.

AUBURN SECTION.

Work done in this section consisted of reinforcing the old bulkhead above the new Stuck River Highway Bridge and channel diversion by the removal of about 6,000 yds. of gravel with one of our Fordson Bagleys, filling in the deep hole on the right bank which had scoured quite badly during the spring run-off.

This work is covered under Item 2 with \$8,000.00 allowed and only \$1,988.59 expended. There still remains some work to be done at this location and having no appropriation for same in the 1926 budget, I would suggest that \$3,500.00 of the unexpended budget balance in 1925 be made available for this purpose.

Under permit issued by the Joint Board on August 11th, the City of Auburn laid a 24 inch steel water supply pipe across the White River and under the Auburn Dam. This work was done in accordance with plans suggested by Mr. Thomson and myself, and the work has been completed in a very satisfactory manner, all physical conditions having been replaced as nearly as possible.

COUNTY LINE SECTION.

Item 3.

Eight hundred and fifty feet of wooden pile bulkhead was driven and braced, and between 30,000 and 40,000 yards of gravel removed from the main channel location using the large steam donkey equipt for fuel oil burning, with a 2½ yard Bagley scraper, all in accordance with the general plan for channel control submitted by Mr. Thomson and myself and approved by the Joint Board on July 10, 1925. In this section \$13,666.19 has been expended, the excess over the appropriation of \$11,000.00 being necessary to make existing work fairly safe in high stages of water. This work is quite well illustrated in the series of pictures accompanying this report and we believe that sufficient progress has been made to give us a demonstration of the efficacy of the plan adopted. The large donkey is continuing to operate at the present

time and will do so during the year unless prevented by high water, and we believe that with the appropriation provided quite an appreciable showing should be made toward the permanent control of this section.

DIERINGER SECTION.

Item 4.

Six hundred dollars was expended in the construction of retards and brushed mattresses below the Stewart Bridge and at Nessick's Place. One Thousand Four hundred thirteen and 72/100 dollars was expended in replacing the toe of old type 4 revetment above the Yeast Plant Bridge at Sumner, which was being very badly undermined.

Under Item 5 \$6,001.13 was expended for the construction of about 1,000 ft. of type 7 revetment on the right bank above the Sumner Bridge. In order to get the brush mattress to the submerged level it became necessary to do quite a considerable amount of excavation with the Fordson Bagley, the material being used in building up and getting a better alignment to the bank. (See photos attached.)

ROESLI SECTION.

Under Item 6 \$796.00 was expended in rebrushing the shear bulkhead driven in 1924 which is in good condition and in the construction of 4 retards and the removal of about 5,000 yds. of gravel from the bar which was building up in the center of the channel. This work was done with the Fordson Bagley and the gravel excavated was used to fill up the deep hole next to and build up the right bank.

Under Item 7 \$456.76 was expended for river clearing and minor repairs.

PUYALLUP SECTION.

Work in this section consisted of repairs to old bulkheads and the construction of a retard on the right bank above the new Meridian Street Bridge.

The condition of this bank for a distance of 1,800 feet up stream from the new Meridian Street Bridge, at the present time being partially protected by 5 old bulkheads driven in 1910, is such that I feel some measures should be taken this year to prevent erosion on the banks and a possible washout around the piers on the bridge, and I am therefore

presenting at this time a revised budget for 1926 with an amount of \$15,000. for this work, eliminating other items from the budget which are not of such vital importance. On account of the fact that it will be necessary to remove old bulkheads and build some levee, placing mattress and type 7 revetment thereon, probably not more than 1,000 or 1,200 ft. can be completed within the amount named.

MURPHY SECTION.

During the month of February the condition of 900feet of old type 6 revetment on the left bank below the Short Line Bridge became so badly undermined that it was necessary to make immediate repairs by laying mattress and replacing about 8 feet in width of concrete revetment at a cost of approximately \$1,533.00, charged to Item 11, Maintenance and Repairs.

RESERVATION SECTION.

Item 9 provides for the replacement of old bulkhead # 3 with type 7 revetment. This proved to be rather a difficult piece of work on account of the sheet piling of the old bulkhead extending further into the river than the correct alignment for the new levee which had to be built at this point. The sheet piling had to be either pulled or broken off below low water piece-meal, using a Fordson donkey, in order to provide a submerged level for the new mattress. Approximately 10,000 yds. of material was taken from behind the old bulkhead with slip scrapers and used in construction the new levee. Total cost \$10,198.20

Item 10 covers the closing of openings # 2 and 3 and the removal of old bulkhead # 6 on the north bank by building levee and laying approximately 4,000 ft. of mattress and type 7 revetment. Approximately 40,000 yds. of material was handled, most of it coming from the river channel using 2 Fordson Bagleys operating 2 shifts a day and the balance from borrow pits with slip scrapers at an average cost of approximately 25¢ per yard.

This is one of the longest units of Monolithic revetment on the river and on account of the low land behind the levee considerable care was exercised in its construction to secure good alignment and by

building berms on the land side. The levee itself being built of alluvial sand, gravel and silt was covered and faced on the slope with about 6 inches of clay which will be seeded with a deep rooting grass this spring to prevent surface erosion.

The entire levee from the upper end of this work to the Pacific Highway Bridge, a distance of over 2 miles, was then covered with about 6 inches of bank-run gravel, approximately 5,000 cu. yds. being used at a cost of \$1.00 per yard. Costs on this job are segregated as follows:

40,000 yds. of levee fill @ 25¢	\$10,000.00
5,000 yds. of gravel blanket	5,324.00
4,000 lin.ft. mattress & concrete revetment	36,000.00
Right of Way purchased	<u>990.00</u>
Total	\$50,314.00

A series of photos attached show work in different stages of construction.

Under the agreement with Pierce County in 1924 for the utilization of gravel from Roberts Hill in building up the south levee there remained about 900 yds., uncompleted by Pierce County which has been delivered this year bringing both levees up to the newly established grade. In addition to this Mr. Ball has surfaced the south levee from Clark's Creek to the Highway Bridge with excellent road material, making a fine driveway.

SALE OF ABANDONED CHANNEL.

I am submitting herewith an offer from O. R. Bringham to purchase 2.32 acres in the old abandoned channel of the Puyallup River abutting his property in Sec. 20, Tp. 20 No., R. 4 E. at a price of \$75.00 per acre on terms of \$74.00 cash and \$100.00 in one year with interest at 6 %. This is a portion of the old channel taken back from J. L. McMurray last February and of which 4.3 acres was sold to Geo. H. Bosick at the same price by authority of the Board in July. I would recommend that the sale be authorized and am presenting contracts for your signature.

INDUSTRIAL INSURANCE.

Beginning January, 1926 Industrial Insurance rates were raised from 1/10 of 1% to 1%, an increase of 900% and Medical Aid was increased from 1½¢ to 2¢ per day. The total amount paid out for Industrial Insurance and Medical Aid was \$939.87.

EQUIPMENT PURCHASED.

The following equipment was purchased during the year, the cost of which was distributed among the various jobs on which it was used.

1 Fordson Donkey	\$ 1,248.00
1 Acetylene Welding Outfit.....	147.65
1 Oil Burner & Tanks for S. Donkey.	<u>470.00</u>
Total	\$1,865.65

REVISED BUDGET FOR
1926

Item 1...Bank protection above new Stuck River Bridge	\$ 5,000.00
Item 2...County Line Section, Channel Control	25,000.00
Item 3...Dieringer Section, Retards, Mattress, etc.....	1,000.00
Item 4...Reesli Section, Channel Control	4,500.00
Item 5...Bank protection above new Meridian St. Bridge ...	15,000.00
Item 6...Murphy Section, Channel Control	2,000.00
Item 7...Replace old bulkhead #5 with type 7 revetment, Reservation Section	9,000.00
Item 8...Maintenance and Repairs	10,000.00
Item 9...General Control	<u>10,000.00</u>
Total	\$ 81,500.00

Respectfully submitted

H. F. Gronen
Chief Engineer
Inter-County River Improvement